Yukiwariso – Subdivision in Hepatica Types

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Growing the genus Hepatica is a very great joy; more and more gardeners are discovering these wonderful flowers - and so did I. At first it was the European *Hepatica nobilis* var. *nobilis* (often called *H. nobilis*) that caught my interest. Perhaps I should rather say that I didn't know Japanese *H. nobilis* var. *japonica* (called *H. japonica*) at that time but that my enthusiasm grew on seeing its wonderful half- or fully-filled flowers during a fascinating Hepatica journey in Japan. The Japanese name for Hepatica is *Yukiwariso*, a *plant that breaks through the snow*, and in Japan as well as in Europe it is a wonderful harbinger of spring.

Most cultivars of *Hepatica japonica* are native to the mountain areas around Niigata on the north-western part of the main island of Honshu and to Sado Island off the coast of Niigata. This region contains most of the nurseries and growers today. Some mutated forms of hepaticas have been discovered here that offer a genealogical record for many contemporary sorts. When a group of collectors found some very unusual forms here thirty years ago, it produced a Japanese boom in hepaticas and in the following few years several hundred clones were selected and named. Now there are thousands of different sorts and every year the breeders produce new and evermore fantastic new flowers.

Cultivation

There is no great difference between the cultivation of the European and the Japanese varieties. There is some difference in the soil preferences, as *Hepatica japonica* likes an acidity of pH 5.5 to 6, whereas *H. nobilis* prefers a neutral pH 7 or more. Moreover, *H. nobilis* is more tolerant of frost than *H. japonica*. Hepaticas may be grown in pots in the greenhouse as well as in the garden.

In the garden I grow them in woodland beds together with rhododendrons and other Asian native plants. Moist beds with good drainage and humus in the shade under deciduous trees imitate the plants' normal living conditions in the wild. Shade in summer is very important or the leaves will be damaged by sunburn and the plant may even die. Hepaticas like to be fertilized - I use an ordinary garden fertilizer in spring and summer, and in autumn one containing more potassium for root development. In winter I cover *Hepatica japonica* with a plastic box with holes for air circulation. This protects from rain and ice while allowing

ventilation. *H. japonica* is said to tolerate -10˚ C (bare frost) and well-established plants may tolerate even more; *H. nobilis* will endure down to -20˚ C or more.

In my greenhouse I grow *Hepatica japonica* in pots with a soil mix of good potting compost, perlite and gravel. In March I give a long-lasting and effective fertilizer, and when repotting in August and September I apply fertilizer containing more potassium so as to encourage root development. I keep the greenhouse as chilly as possible by using nets for shade and I whitewash it a couple of times every spring and summer. It is of course important to check the plants regularly for pests and disease.

These are the main features of my way of cultivating hepaticas but probably there are almost as many different ways as there are growers; as all plant breeders know, no path is the only true path.

Type 1: *Hyoujunka* with fully developed stamens and pistils

Subdivision in Types

Hepatica japonica consists of many different flower types and, to keep track of these, the International Hepatica Society has divided them into nine types, which I will try to explain and describe here. It can be a little difficult for Europeans to remember Japanese names but I think it is a very good idea to learn these particular nine; when using them, there can be no doubt as to which kind of plant we are talking about. First let me say that *zaki* means *flower* or *flowering*, so that types 2 to 9 all have something to say about the flower. The nine types are:

1. *Hyoujunka* is the single flower with full developed pistils and stamens. It can have any number of petals – the number matters not, as the existence of stamens and petals defines it as a *Hyoujunka*.

2. *Otome-zaki.* *Otome* means *maiden*, referring to the lack of anthers. It is a type that we also know from the European hepatica. *Otome-zaki* has no pollen although the pistils are fully developed. It follows that the only difference between *Hyoujunka* and *Otome-zaki* is the lack of anthers. When taking pollen from *Hyoujunka* it will produce seed.

Type 2: *Otome-zaki* with fully developed pistils, but without stamens

3. *Nidan-zaki*. *Ni* means *two*, and *Nidan* means *two-layered*. This feature is very clear on looking at the flower, which is why this type is so named. There are simply two layers of petals: the outer layer is the normal, while the inner has mutated stamens. The inner layer comprises flat-lying petals, which may have equal or different length. It means that this group, like *Otome-zaki*, lacks the male organs whereas the female is fully developed. *Nidan-zaki* produces seed but, like *Otome-zaki*, one must take the pollen from *Hyoujunka*. It is a popular type in Japan and it can be very expensive, especially so whenever the outer petals are deep red or blue and the inner petals are white.

4. *Nichirin-zaki*. *Nichirin* means *sun*, or a form of decoration behind Buddha. And the flower indeed resembles a sun, surrounded by a ring of short beams. The 'beams' are the mutated stamens, which are changed to short, almost cut, petals. They are layered in a well-organized ring around the fully developed pistils. It is reminiscent of *Nidan-zaki* and one can say that it is a cross between *Otome-zaki* and *Nidan-zaki*, in the sense that *Nidan* has a layer of fully developed and fully grown inner petals, whereas in *Nichirin* this layer is cut and in *Otome* it is lacking completely. They will produce seed if you pollinate them.

Type 3: *Nidan-zaki* – a fine specimen with red and white petals. The inner petals are equal and well placed

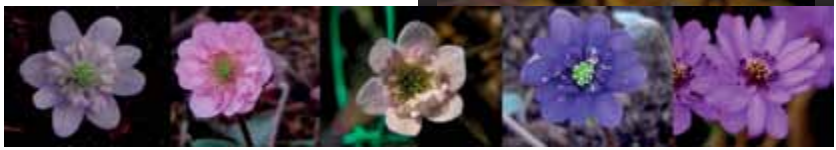
Type 4: *Nichirin-zaki* look almost like *Nidan-zaki*, but the inner petals are shorter. This is 'Togunohikari-kei'

5. ***Chyouji-zaki***. *Chyouji* refers to the shape of the inner petals, which compare to a garlic bulb composed of many small cloves. The mutated stamens, which are changed to inner petals, are curled and encircle the fully developed pistils. Like the *Nichirin-zaki*, it can produce seed.

6. ***Karako-zaki***. *Karako* is related to an old Chinese hairstyle. In contrast to the previously mentioned types, both pistils and stamens are mutated to straight or curled petals. This is the main rule but one may often find pistils and - if so – they should be exploited because *Karako*, an almost filled form, can produce good F1 plants for further propagation. The classification of *Karako* has recently become more comprehensive, and divides into '*Karako* without pistils' and '*Nidan-Karako* with pistils'. It is difficult to determine which plants belong to *Nidan-Karako* because the presence of pistils depends on the age of the plant. Hepaticas must grow for three years before reaching their final appearance.

Type 5: *Chyouji-zaki* with curled inner petals. This is 'Hinamaturi'

7. ***Sandan-zaki***. *San* means *three* – meaning that the flower of this group is *three-layered*. Both stamens and pistils are mutated to petals. The outer layer has the normal petals; the next layer has the mutated stamens, which may sometimes contain pollen. In the middle of the flower one sees



the mutated pistils, changed to petals. Because this type sometimes produces pollen, it makes it different from the others, giving the possibility of crossing two mutated types such as *Sandan* and *Karako*, which is why *Sandan-zaki* is that most wanted by present-day Japanese breeders. A good looking *Sandan-zaki* which produces pollen is very desirable in Japan, and may be very expensive. Among the European *Hepatica nobilis* this type is known as *semiplena*. It is very rare and perhaps this is one of the reasons why we in Europe are not able to breed the filled or half-filled forms as the Japanese do – we simply don't have the basic material.

Type 6: *Karako-zaki* with perhaps a few pistils

Type 7: Type 7: *Sandan-zaki*, three layers of ordinary outer petals, mutated stamens, and in the middle the mutated pistils. This is from the famous Japanese breeder Kouishi Iwafuchi

8. ***Senne-zaki*** **(or *Senju-zaki*)**. *Sen* means *thousand* - and that again means *thousand-layered* flower. All the pistils as well as the stamens are mutated to petals. The flower is infertile and propagation must be done by division. Many of these forms are descendants from wild collected

plants in Niigata and Sado Island. *Senne-zaki* can arise from seed, if one has the right F1 plant.

Type 8: *Senne-zaki*. All stamens and pistils are mutated to petals. This is 'Daisetsurei'

9. *Yousei-zaki*. *Yousei* means *fairy* or *pixie*. The stamens as well as the pistils are mutated to petals and the plant is infertile. It is the most recently introduced type and has traits from some of the previous ones. This type is unstable because it often - after division - loses the filled form and reverts to single flowering. This, incidentally, is a phenomenon also shown by the others; mostly they go back to their original form once they have recovered themselves. This behaviour is a natural reaction to ensure survival.

These nine types dominate but so much crossing is being done that it can be difficult to say to which type any given plant belongs. In www.hepatica.eu one can read more details on subjects such as cultivation, pest and diseases, breeding filled or half-filled flowers from seed, and the meaning of F1 and F2 plants. There are plenty of extra photos of the nine types on www.gtpoulsen.dk.

I am very grateful to my husband Thorkild for all his photographs both in this article and on this website.

Type 9: *Yousei-zaki* 'Kazenosato'